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L12: Entry 6 of 30

File: PGPB

Jul 10, 2003

DOCUMENT-IDENTIFIER: US 20030130592 A1

TITLE: Method of monitoring the menstrual cycle and/or pregnancy in a female

Detail Description Paragraph:

[0116] To assess steroid hormone-mediated effects on adhesiveness of endometrium for NK cells, CD56-labeled human PBL were applied to uteri from Ovx mice treated with oil, E2 (low or high dose), P4 or E2+P4 with or without decidualization. Adhesion was assessed under mechanical shear. All hormone treatments promoted similar levels of statistically significant adhesion compared to adhesion on control uterine tissue (placebo-treated Ovx or virgin; FIG. 4). The presence of decidualized stroma had no independent effect. Adhering CD56.sup.bright cells were randomly distributed across all of these uteri as single cells. The adherent CD56.sup.bright cells were heterogeneous in size, some being larger cells (8.01-9.01 .mu.m as compared to 6.8.+-.0.41 .mu.m). Adhesion was blocked using either DREG56 or HP2/1 mAbs to L-selectin and alpha4 integrin, respectively (FIG. 4).

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## WEST Search History

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DATE: Tuesday, April 03, 2007

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L1	micturition or chyme or peristalsis or shear\$	419357
<input type="checkbox"/>	L2	L1 and (fimbr\$ or fimh or fim-h or (type1 or type-1 or (type near 1)))	8471
<input type="checkbox"/>	L3	L1 same (fimbr\$ or fimh or fim-h or (type1 or type-1 or (type near 1)))	483
<input type="checkbox"/>	L4	L3 and (fimbrin or fibrillae or fimbriate or fimbriae or pili or pilus)	43
<input type="checkbox"/>	L5	L3 and (fimbrin or fibrillae or fimbriate or fimbriae or pili or pilus)	43
<input type="checkbox"/>	L6	flow\$ near5 channel\$	176758
<input type="checkbox"/>	L7	L6 same \$mannos\$	12
<input type="checkbox"/>	L8	biacore\$	6718
<input type="checkbox"/>	L9	L8 and fimh	30

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DATE: Tuesday, April 03, 2007

**Hide?** Set Name Query**Hit Count***DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR*

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<input type="checkbox"/>	L2	L1 and (fimbr\$ or fimh or fim-h or (type1 or type-1 or (type near 1)))	8471
<input type="checkbox"/>	L3	L1 same (fimbr\$ or fimh or fim-h or (type1 or type-1 or (type near 1)))	483
<input type="checkbox"/>	L4	L3 and (fimbrin or bibrillae or fimbriate or fimbriae or pili or pilus)	43
<input type="checkbox"/>	L5	L3 and (fimbrin or fibrillae or fimbriate or fimbriae or pili or pilus)	43

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DATE: Tuesday, April 03, 2007

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<input type="checkbox"/>	L2	stick near roll	1557
<input type="checkbox"/>	L3	L2.and fimh	0
<input type="checkbox"/>	L4	L2 and adhesin	0
<input type="checkbox"/>	L5	L2 and adhesion	259
<input type="checkbox"/>	L6	L5 and mannos\$	1

END OF SEARCH HISTORY

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critical value

fimbrii  
fimbrial  
fimbriated

## WEST Search History





DATE: Tuesday, April 03, 2007

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<input type="checkbox"/>	L2	lectin near10 shear	120
<input type="checkbox"/>	L3	L2 same force	2
<input type="checkbox"/>	L4	lectin same mechanical	1041
<input type="checkbox"/>	L5	L4 same flow\$	25
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<input type="checkbox"/>	L8	L7 not l3 not l6 not l1	139
<input type="checkbox"/>	L9	L8 and (force or tensile or shear or catch or bondstress or bond-stress or strength or increase or decrease or enhanced or improved)	127
<input type="checkbox"/>	L10	lectin near5 flex\$	20
<input type="checkbox"/>	L11	lectin near5 bond near5 strength	0
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DATE: Tuesday, April 03, 2007

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
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<input type="checkbox"/>	L2	lectin near10 shear	120
<input type="checkbox"/>	L3	L2 same force	2
<input type="checkbox"/>	L4	lectin same mechanical	1041
<input type="checkbox"/>	L5	L4 same flow\$	25
<input type="checkbox"/>	L6	lectin near5 structur\$ near5 modif\$	2
<input type="checkbox"/>	L7	lectin near5 flow\$	140
<input type="checkbox"/>	L8	L7 not l3 not l6 not l1	139
<input type="checkbox"/>	L9	L8 and (force or tensile or shear or catch or bondstress or bond-stress or strength or increase or decrease or enhanced or improved)	127
<input type="checkbox"/>	L10	lectin near5 flex\$	20

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L10: Entry 5 of 20

File: PGPB

Oct 2, 2003

DOCUMENT-IDENTIFIER: US 20030186850 A1

TITLE: Methods of modulating functions of polypeptide GalNAc-transferases and of screening test substances to find agents herefor, pharmaceutical compositions comprising such agents and the use of such agents for preparing medicaments

Detail Description Paragraph:

[0341] 4. Hazes, B. The (Q.times.W)3 domain: a flexible lectin scaffold. Protein Science, 5: 1490-1501, 1996.

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Generate Collection

Print

L10: Entry 6 of 20

File: PGPB

Aug 21, 2003

DOCUMENT-IDENTIFIER: US 20030158095 A1

TITLE: Method of using lectins for therapy of diseases transmittable by sexual contact

Detail Description Paragraph:

[0052]. The device may be manufactured from any material that has been shown to be biocompatible with the environment of the vagina and to be capable of holding lectins within its bulk and releasing them slowly to the surrounding environment. Several materials suitable for this function are already known from the vaginal devices already in use or disclosed in the technical literature. Consequently, the skilled practitioner can easily select a suitable material from which to make the device of this invention. The lectins may also be incorporated into a thin flexible coating, placed on the ring or web or both, and designed to release the lectins therefrom over a period of time, e.g., by diffusion out of the coating or by gradual erosion and dissolution of the coating in the vaginal environment. The lectins may also be linked covalently to the surface of the device.

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L10: Entry 7 of 20

File: PGPB

Mar 27, 2003

DOCUMENT-IDENTIFIER: US 20030060516 A1

TITLE: Method of using lectins for contraception, prophylaxis against diseases transmittable by sexual contact, and therapy of such diseases, and apparatus for administering lectins

Detail Description Paragraph:

[0052] The device may be manufactured from any material that has been shown to be biocompatible with the environment of the vagina and to be capable of holding lectins within its bulk and releasing them slowly to the surrounding environment. Several materials suitable for this function are already known from the vaginal devices already in use or disclosed in the technical literature. Consequently, the skilled practitioner can easily select a suitable material from which to make the device of this invention. The lectins may also be incorporated into a thin flexible coating, placed on the ring or web or both, and designed to release the lectins therefrom over a period of time, e.g., by diffusion out of the coating or by gradual erosion and dissolution of the coating in the vaginal environment.

## CLAIMS:

23. The medicator of claim 22 wherein said flexible resilient material is impregnated with a plurality of lectins.

25. The medicator of claim 24 wherein said flexible resilient material is impregnated with a plurality of lectins.

26. The medicator of claim 22 wherein said flexible resilient material is impregnated with a lectin selected from the group consisting of ABA, TKA, DSA, WFA, VFA, Jacalin, and MPA.

27. The medicator of claim 26 wherein said flexible resilient material is impregnated with a plurality of lectins.

28. The medicator of claim 22 wherein said flexible resilient material is impregnated with a lectin selected from the group consisting of Cona, EEA, MPA and HAA.

29. The medicator of claim 28 wherein said flexible resilient material is impregnated with a plurality of lectins.

33. The medicator of claim 32 wherein said flexible resilient material is impregnated with a plurality of lectins.

35. The medicator of claim 34 wherein said flexible resilient material is impregnated with a plurality of lectins.

37. The medicator of claim 36 wherein said flexible resilient material is impregnated with a plurality of lectins.

☐ 1: FEMS Immunol Med Microbiol. 1996 Dec 1;16(2):127-39.



Links

**Fimbrial adhesins: similarities and variations in structure and biogenesis.**

**Smyth CJ, Marron MB, Twohig JM, Smith SG.**

Department of Microbiology, Moyne Institute of Preventive Medicine,  
Trinity College, University of Dublin, Ireland. csmyth@tcd.ie

Fimbriae are wiry (2 to 4 nm diam.) or rod-shaped (6 to 8 nm diam.), fibre-like structures on the surfaces of bacteria which mediate attachment to host cells. Much has been learned in recent years about the biogenesis, structure and regulation of expression of these adhesive organelles in Gram-negative bacteria. Analyses of the genetic determinants encoding the biogenesis of fimbriae has revealed that the adhesive interaction of fimbriae can be mediated by major subunits (CFA/I and CS1 fimbriae) or minor subunits (P, S, and type 1 fimbriae), with the adhesin being located either at the tip of the fimbria or along the length of the fimbrial shaft. Minor subunits can also act as adapters, anchors, initiators or elongators. Post-translational glycosylation of the type 4 pilins of *Neisseria gonorrhoeae*, *Neisseria meningitidis* and *Pseudomonas aeruginosa* has been demonstrated. The structures of the PapD chaperone of *Escherichia coli* and of *N. gonorrhoeae* type 4 fimbrin have been resolved at 2.0-2.6 Å. Rod-shaped fimbriae should not be thought of as being rigid inflexible structures but rather as dynamic structures which can undergo transition from a helicoidal to a fibrillar conformation to provide a degree of elasticity and plasticity to the fimbriae so that they can resist shear forces, rather like a bungee cord. At least four mechanisms have been identified in the assembly of fimbriae from fimbrin subunits, namely the chaperone-usher pathway (e.g., P-fimbriae of uropathogenic *E. coli*), the general secretion assembly pathway (e.g., type 4 fimbriae or N-methylphenylalanine fimbriae of *P. aeruginosa*, the extracellular nucleation-precipitation pathway (e.g., curli of *E. coli*) and the CFA/I, CS1 and CS2 fimbrial pathway.

PMID: 8988393 [PubMed - indexed for MEDLINE]

Have

Items 1 - 4 of 4

One page.

☐ 1: [Forero M, Yakovenko O, Sokurenko EV, Thomas WE, Vogel V.](#)[Related Articles, Links](#)

Uncoiling mechanics of Escherichia coli type I fimbriae are optimized for catch bonds.

PLoS Biol. 2006 Sep;4(9):e298.

PMID: 16933977 [PubMed - indexed for MEDLINE]

☐ 2: [Nilsson LM, Thomas WE, Sokurenko EV, Vogel V.](#)[Related Articles, Links](#)

Elevated shear stress protects Escherichia coli cells adhering to surfaces via catch bonds from detachment by soluble inhibitors.

Appl Environ Microbiol. 2006 Apr;72(4):3005-10.

PMID: 16598008 [PubMed - indexed for MEDLINE]

☐ 3: [Thomas W, Forero M, Yakovenko O, Nilsson L, Vicini P, Sokurenko E, Vogel V.](#)[Related Articles, Links](#)

Catch-bond model derived from allostery explains force-activated bacterial adhesion.

Biophys J. 2006 Feb 1;90(3):753-64. Epub 2005 Nov 4.

PMID: 16272438 [PubMed - indexed for MEDLINE]

☐ 4: [Thomas WE, Nilsson LM, Forero M, Sokurenko EV, Vogel V.](#)[Related Articles, Links](#)

Shear-dependent 'stick-and-roll' adhesion of type 1 fimbriated Escherichia coli.

Mol Microbiol. 2004 Sep;53(5):1545-57.

PMID: 15387828 [PubMed - indexed for MEDLINE]

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END OF SEARCH HISTORY

coli O1:K1 / APEC  
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Abortusovis  
A2IC35\_ECOLI  
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FimH (Fragment) {GENE:Name=fimH} - Escherichia coli

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Putative Fimh-like protein {GENE:ORFNames=MADE\_15104} - Alteromonas macleodii 'Deep ecotype'

A4C7N3\_9GAMM  
Putative Fimh-like protein {GENE:ORFNames=PTD2\_14244} - Pseudoalteromonas tunicata D2

O87634\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli

Q08858\_KLEPN  
Fimbrial adhesin precursor {GENE:Name=fimH} - Klebsiella pneumoniae

Q0GIK2\_SALDU  
Fimbrial subunit {GENE:Name=fimH} - Salmonella dublin

Q0GIK3\_SALHA  
Fimbrial subunit {GENE:Name=fimH} - Salmonella hadar

Q0SXM5\_SHIF8  
FimH protein {GENE:Name=fimH; OrderedLocusNames=SFV\_4206} - Shigella flexneri serotype 5b (strain 8401)

Q0T693\_SHIF8  
FimH-like protein {GENE:OrderedLocusNames=SFV\_0950} - Shigella flexneri serotype 5b (strain 8401)

Q0T8Y8\_ECOL5  
FimH protein {GENE:OrderedLocusNames=ECP\_4655} - Escherichia coli O6:K15:H31 (strain 536 / UPEC)

Q1R2J4\_ECOUT  
Type 1 fimbrial adhesin FimH {GENE:Name=fimH; OrderedLocusNames=UTI89\_C5017} - Escherichia coli (strain UTI89 / UPEC)

Q1ZU85\_9VIBR  
FimH protein {GENE:ORFNames=VAS14\_14449} - Vibrio angustum S14

Q31T23\_SHIBS  
Minor fimbrial subunit {GENE:Name=fimH; OrderedLocusNames=SBO\_4370} - Shigella boydii serotype 4 (strain Sb227)

Q32HW5\_SHIDS  
FimH-like protein {GENE:OrderedLocusNames=SDY\_0914} - Shigella dysenteriae serotype 1 (strain Sd197)

Q3IHT4\_PSEHT

Putative Fimh-like protein {GENE:OrderedLocusNames=PSHAa2268} -  
Pseudoalteromonas haloplanktis (strain TAC 125)  
Q3Z3I0\_SHISS  
FimH-like protein {GENE:OrderedLocusNames=SSON\_0945} - Shigella sonnei  
(strain Ss046)  
Q57S19\_SALCH  
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Q5D223\_ECOLI  
Type 1 fimbrial adhesin precursor {GENE:Name=fimH} - Escherichia coli  
Q5D224\_KLEPN  
Type 1 fimbrial adhesin precursor {GENE:Name=fimH} - Klebsiella pneumoniae  
Q5PCD5\_SALPA  
FimH protein {GENE:Name=fimH; OrderedLocusNames=SPA2178} - Salmonella  
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FimH-like protein {GENE:OrderedLocusNames=LIC\_12680} - Leptospira interrogans

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US96/18796

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A61K 35/12, 35/66; 38/17, 39/02; C07K 2/00, 4/04, 4/12

US CL : 424/184.1, 520; 435/243; 514/ 2, 8; 530/300, 350

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/184.1, 520; 435/243; 514/ 2, 8; 530/300, 350

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, DIALOG, BIOSIS, CA, EMBASE, MEDLINE, WPI

search terms: elam, e-selectin, bacteri7, microorganism7, mimic7

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,081,034 A (BEVILACQUA et al.) 14 January 1992, see entire document.	1-8, 34-36, 38, 39, 41, 47, 48 ----- 50-54
X --- Y	WO 94/05269 A1 (CENTOCOR, INC.) 17 March 1994, see entire document.	1-8, 34-36, 38, 39, 41, 45, 47, 48 ----- 50-54
X --- Y	WO 92/02817 A1 (BIOCARB, INC.) 20 February 1992, see entire document.	50-54 ----- 1-8, 34-36, 38, 39, 41, 45, 47, 48

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	*Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z*	document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means		
*P* document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

28 MARCH 1997

Date of mailing of the international search report

09 JUN 1997

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

PHILLIP GAMBEL

Telephone No. (703) 308-0196

Z5918} - Escherichia coli O157:H7  
Q8XDC9\_ECO57  
Homolog of Salmonella FimH protein {GENE:OrderedLocusNames=ECs1025,  
Z1290} - Escherichia coli O157:H7  
Q8Z8P2\_SALTI  
FimH protein {GENE:Name=fimH; OrderedLocusNames=STY0594, t2316} -  
Salmonella typhi  
Q9AP05\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9APN6\_9GAMM  
Fimh-like protein - Pseudoalteromonas sp. NM-2001  
Q9F5R9\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9F5S0\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9F5S1\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9F6Z7\_ECOLI  
Type 1 fimbrial adhesin subunit FimH {GENE:Name=fimH; ORFNames=eco0007} -  
Escherichia coli  
Q9R5Y2\_ECOLI  
FIMH SUBUNIT=MANNOSE-sensitive type 1 fimbrial adhesin - Escherichia coli  
Q9S494\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9S495\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9S496\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9S497\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9S6R1\_ECOLI  
Type 1 fimbriae adhesin, polypeptide {GENE:Name=fimH} - Escherichia coli  
Q9XBV8\_ECOLI  
FimH {GENE:Name=fimH} - Escherichia coli  
Q9Z643\_ENTCL  
Mannose binding protein FimH {GENE:Name=fimH} - Enterobacter cloacae

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# Search in UniProt Knowledgebase (Swiss-Prot and TrEMBL) for: fimh

**UniProtKB/Swiss-Prot Release 52.2 of 03-Apr-2007****UniProtKB/TrEMBL Release 35.2 of 03-Apr-2007**

- 
- Number of sequences found in UniProt Knowledgebase (Swiss-Prot<sub>(2)</sub> and TrEMBL)  
(130): **132**
  - Note that the selected sequences can be saved to a file to be later retrieved; to do so, go to the bottom of this page.
  - For more directed searches, you can use the Sequence Retrieval System SRS.
- 

***Search in UniProtKB/Swiss-Prot: There are matches to 2 out of 263525 entries***

**FIMH\_ECOLI (P08191)**

Protein fimH precursor. {GENE: Name=fimH; OrderedLocusNames=b4320, JW4283} - Escherichia coli

**FIMH\_SALTY (P37925)**

Protein fimH precursor. {GENE: Name=fimH; OrderedLocusNames=STM0547} - Salmonella typhimurium

---

***Search in UniProtKB/TrEMBL: There are matches to 130 out of 4232122 entries***

**A0FKS8\_SALIN**

Fimbrial subunit {GENE:Name=fimH} - Salmonella infantis

**A0T3D1\_SALET**

FimH - Salmonella enterica subsp. enterica serovar Choleraesuis

**A0XXQ4\_9GAMM**

Putative Fimh-like protein {GENE:ORFNames=ATW7\_10573} - Alteromonadales bacterium TW-7

**A1AJI7\_ECOK1**

Type 1 fimbrial adhesin FimH {GENE:Name=fimH; OrderedLocusNames=Ecok1\_43330; ORFNames=APECO1\_2110} - Escherichia

serogroup Icterohaemorrhagiae serovar copenhageni  
Q75FK5\_LEPIC  
FimH-like protein {GENE:OrderedLocusNames=LIC\_20177} - *Leptospira interrogans*  
serogroup Icterohaemorrhagiae serovar copenhageni  
Q83P73\_SHIFL  
Minor fimbrial subunit, D-mannose specific adhesin {GENE:Name=fimH;  
OrderedLocusNames=SF4200, S\_4456} - *Shigella flexneri*  
Q83RY0\_SHIFL  
Homolog of Salmonella FimH protein (FimH-like protein)  
{GENE:OrderedLocusNames=SF0942, S\_1007} - *Shigella flexneri*  
Q83TY4\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW0\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW1\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW2\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW3\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW4\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q84DW5\_ECOLI  
FimH {GENE:Name=fimH} - *Escherichia coli*  
Q8CVF8\_ECOLD  
FimH protein {GENE:Name=fimH; ORFNames=c5400} - *Escherichia coli* O6  
Q8EXA5\_LEPIN  
Fimh-like protein {GENE:OrderedLocusNames=LB309; ORFNames=LB\_309} -  
*Leptospira interrogans*  
Q8EXI4\_LEPIN  
Fimh-like protein {GENE:OrderedLocusNames=LB226; ORFNames=LB\_226} -  
*Leptospira interrogans*  
Q8EZX2\_LEPIN  
Fimh-like protein {GENE:OrderedLocusNames=LA3729; ORFNames=LA\_3729} -  
*Leptospira interrogans*  
Q8F7H0\_LEPIN  
Fimh-like protein {GENE:OrderedLocusNames=LA0975; ORFNames=LA\_0975} -  
*Leptospira interrogans*  
Q8F7T6\_LEPIN  
Fimh-like protein {GENE:OrderedLocusNames=LA0858; ORFNames=LA\_0858} -  
*Leptospira interrogans*  
Q8GC98\_CITFR  
Fimbrial adhesin subunit {GENE:Name=fimH gene} - *Citrobacter freundii*  
Q8XAX2\_ECO57  
Putative adhesin; similar to FimH protein (Putative adhesin)  
{GENE:OrderedLocusNames=ECs2107, Z2206} - *Escherichia coli* O157:H7  
Q8XBA6\_ECO57  
Minor fimbrial subunit, D-mannose specific adhesin (Minor fimbrial subunit/D-  
mannose specific adhesin) {GENE:Name=fimH; OrderedLocusNames=ECs5279,

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/607,834 Confirmation No. 4707  
Applicant : Vogel, et al.  
Filed : June 27, 2003  
TC/A.U. : 1645  
Examiner : Portner, Virginia Allen  
For : Use of Adhesion Molecules as Bond Stress-Enhanced  
Nanoscale Binding Switches  
Docket No. : 91-02  
Customer No.: 23713

Commissioner for Patents  
MAIL STOP AMENDMENT  
P.O. Box 1450  
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB FILING

I hereby certify that this correspondence is being  
filed with the USPTO EFS-WEB system.

October 2, 2006  
Date

/kathyknowles/  
Kathy Knowles

**RESPONSE**

Sir:

In response to the Restriction Requirement dated September 1, 2006, Applicants elect Group I,  
claims 1-42 and 85 with traverse.

Applicant elects as species for initiation of the Examiner's search:

- Increase or decrease change: Increasing bond stress.
- Mode of change: Shear force
- FABSDAM: Adhesin.
- FABSDB-L Mannose
- Particle: Bacterial Pili.

FIM#

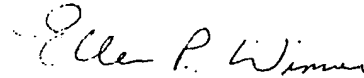
It is understood that should generic claim 1 be found to be allowable, claims to the non-elected species will also be held to be allowable.

Appl: No. 10/607,834  
October 2, 2006  
Reply to Office Action of September 1, 2006

The Restriction Requirement is respectfully traversed. All claims should be allowable if claim 1 is found to be allowable. Applicants reserve the right to request rejoinder of all claims.

It is believed that no fee is due with this response; however, if this is incorrect, please charge any required fee for this submission to Deposit Account No. 07-1969.

Respectfully submitted,



Ellen P. Winner  
Reg. No. 28,547

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Attorney Docket No. 91-02  
October 2, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/607,834 Confirmation No. 4707  
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Commissioner for Patents  
MAIL STOP AMENDMENT  
P.O. Box 1450  
Alexandria, VA 22313-1450

CERTIFICATE OF EFS-WEB FILING

I hereby certify that this correspondence is being  
filed with the USPTO EFS-WEB system.

January 10, 2007  
Date

/ellenwinner/  
Ellen P. Winner

**RESPONSE**

Sir:

In response to the Office Communication dated December 11, 2006, requesting election of a single species of FABSDAM, Applicants elect the species of FimH polypeptide, as set forth in the Restriction Requirement dated September 1, 2006.

It is understood that should generic claim 1 be found to be allowable, claims to the non-elected species will also be held to be allowable.

It is believed that no fee is due with this response; however, if this is incorrect, please charge any required fee for this submission to Deposit Account No. 07-1969.

Respectfully submitted,

/ellenwinner/

Ellen P. Winner  
Reg. No. 28,547

Appl. No. 10/607,834  
January 10, 2006  
Reply to Office Communication of December 11, 2006

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Attorney Docket No. 91-02  
January 10, 2007